

# The Danish System for Access to Micro data Nürnberg 2007

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# Phases

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- From survey- to register based statistics
- 1968: The Person Number
- From mid-1980s increased interest in micro data for research and analysis
- On-site arrangement in 1987
- Remote access arrangement in 2001



# The Organisational Framework

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- Data for research are handled by a special Research Services Division
- 13 employees (8 academics, 4 computer specialists, 1 secretary)
- Grant from the Ministry of Research
- Small branch in Århus, Jutland

# The Research Service Unit

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- Administration of the remote access arrangements
- Administrative work concerning authorizations, contracts etc.
- Coordinating data from different divisions i Statistics Denmark
- Computer related work. Updating research databases
- Advisory role – new and old projects



# Vision

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- Denmark should be one of the World's leading countries within register based research

# Who can have access to microdata?

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- Only persons from special authorized institutions (stable institutions with a responsible manager/director and with a number of researchers/analysts)
- Private companies can be authorized and have access if they have a stable research environment



# Limitations

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- Project description is required
- Data provided according to a "need to know" principle
- Statistics Denmark can reduce data (sample/variables)
- Custom-made datasets by Statistic Denmark based on description
- Single companies cannot have access to micro data with data for other companies

# How are data considered ?

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- Identification variables are removed
- Data are not anonymous
- Researchers have to sign an Agreement on confidentiality
- Foreign researchers can only have access from Danish institutions
- Only remote access to data (data are not leaving Statistics Denmark)





# The Unix Solution

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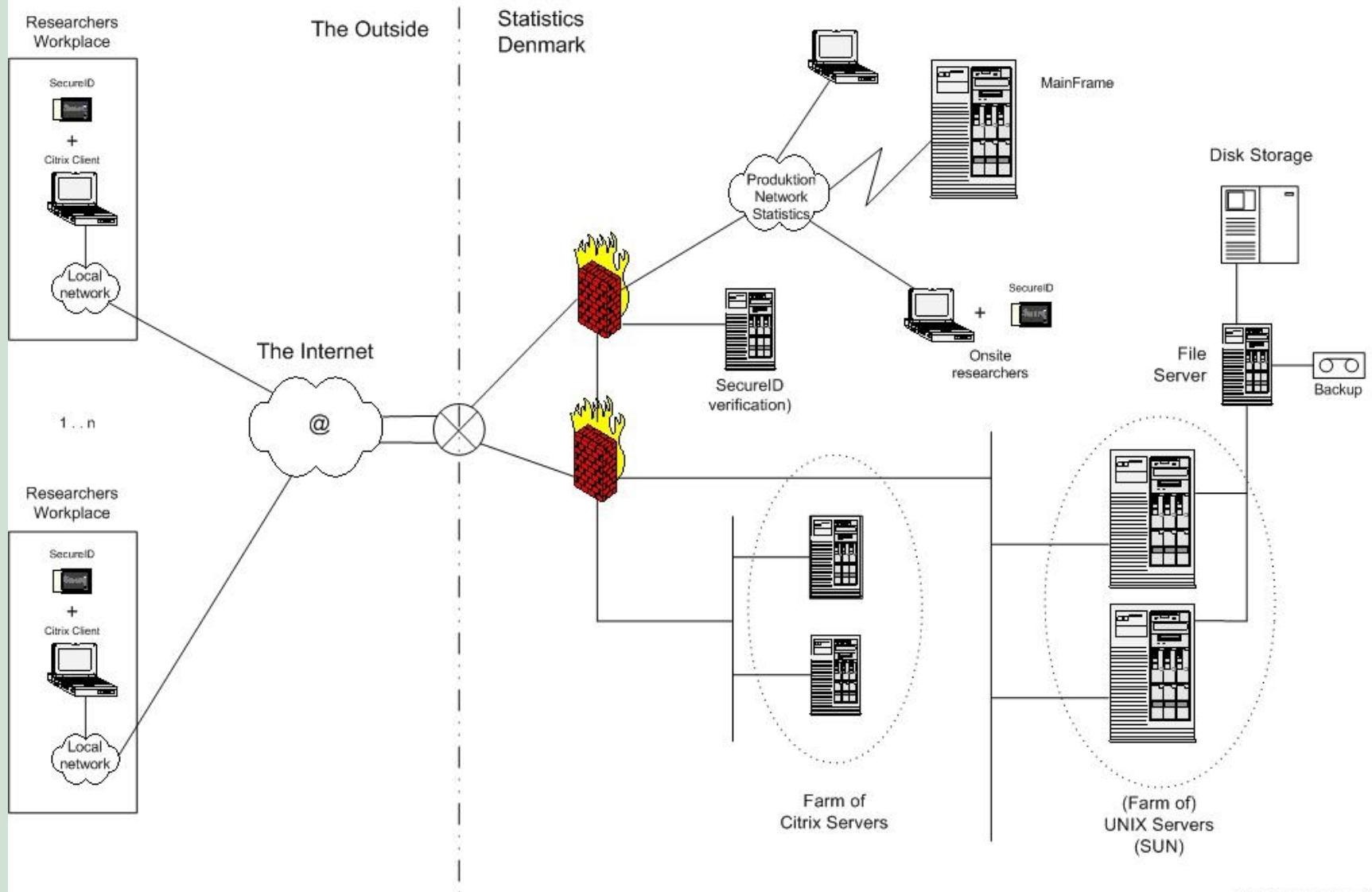
- Special Unix-computers only for access to micro data for researchers
- Separated from the statistical production (main frame)
- Upgraded several times since 1996
- Software: Flexible but most used is SAS, STATA, GAUSS, SPSS
- The de-identified micro data remains on the discs in SD



# Token – RSA SecurID

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Rev 1 March 13th .2002  
ABJ/-

# Output

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- Researchers are not allowed to print individual records and cannot download the basic data
- Output with statistical results can be forwarded by e-mail to the researcher with a copy to Statistics Denmark
- Manual random check of output by Statistic Denmark



# Latest development

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- The remote access arrangements are now the dominant mode of access to micro data
- The on-site arrangement has been closed down except from a few workplaces for foreign researchers



# Considerable growth

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- 1986: 2 researchers
- 1997: 71 researchers
- 2002: 151 researchers
- 2004: 250 researchers
- 2005: 300 researchers
- 2006: 565 researchers
- 2007: 615 researchers



## Combining individual and ecological data to determine compositional and contextual socio-economic risk factors for suicide

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### Abstract

The social and economic characteristics of geographic areas are associated with their suicide rates. The extent to which these ecological associations are due to the characteristics of the people living in the areas (compositional effects) or the influence of the areas themselves on risk (contextual effects) is uncertain. Denmark's Medical Register on Vital Statistics and its Integrated Database for Longitudinal Labour Market Research were used to identify suicides and 20 matched controls per case in 25–60-year-old men and women between 1982 and 1997. Individual and area (municipality) measures of income, marital and employment status were obtained. There were 9011 suicides and 180,220 controls. Individual-level associations with these risk factors were little changed when controlling for contextual effects. In contrast, ecological associations of increased suicide risk with declining area levels of employment and income and increasing proportions of people living alone were much attenuated after controlling for compositional effects. We found no consistent evidence that associations with individual-level risk factors differed depending on the areas' characteristics (cross-level interactions). This analysis suggests the ecological associations to be attributed to characteristics of the residents rather than area influences on risk.

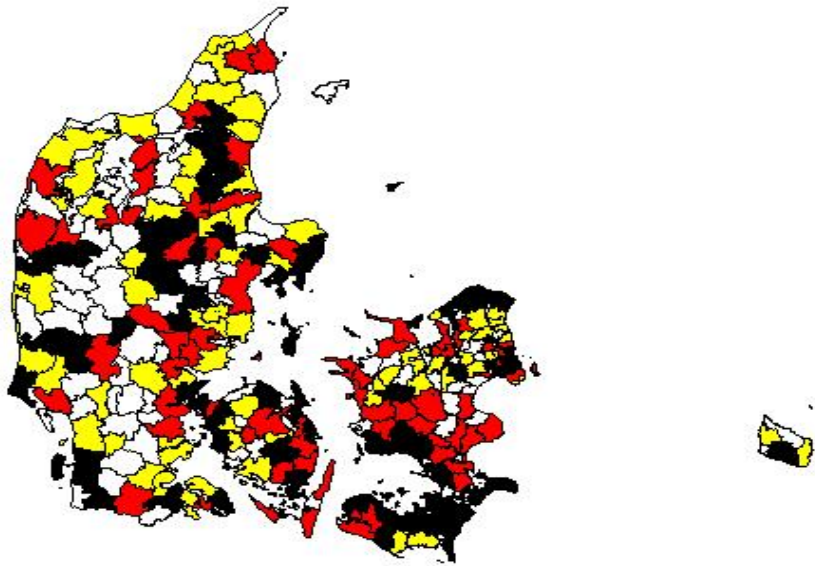
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**Keywords:** Suicide; Socio-economic factors; Compositional and contextual effects; Denmark

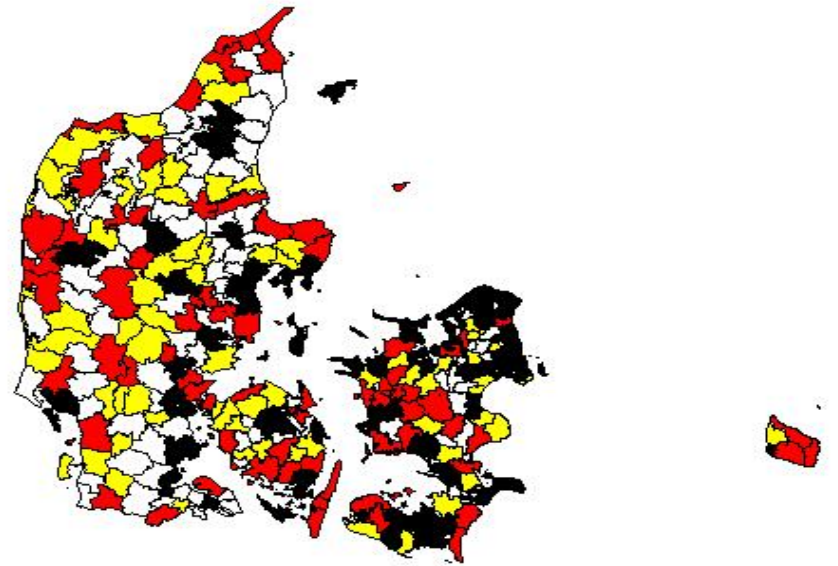
### Introduction

Research dating back over 100 years has highlighted that individual acts of suicide could be due to forces external to individuals, reflecting the characteristics of societies (Durkheim, 1952; Morselli, 1881). Such effects have in various disciplines

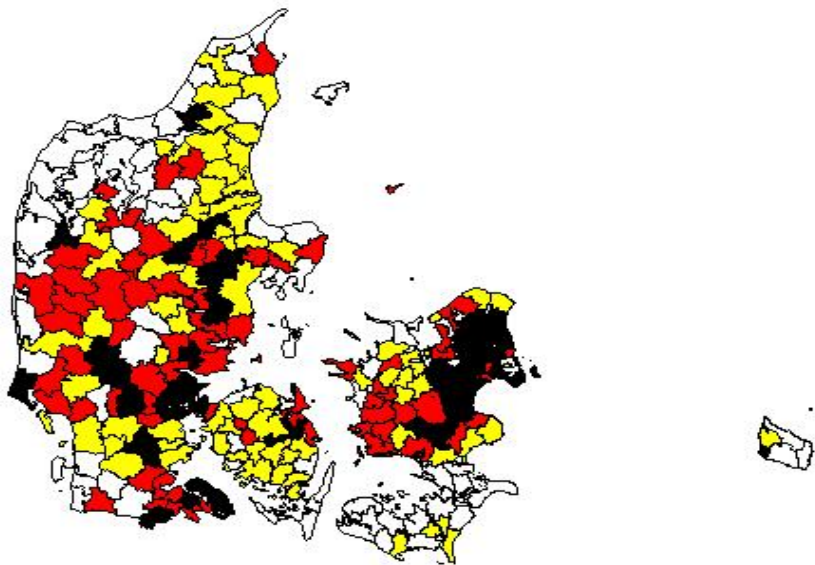
become known as "contextual effects" (Greenland, 2001; Joshi, 1993) and in recent years a series of ecological studies have identified factors associated with suicide rates in different geographic areas. The main factors identified are indicators of social fragmentation (anomie) and disintegration, (Ashford & Lawrence, 1976; Congdon, 1996a, 2000; Sundström & Lundberg, 1996; Whitely, Gunnell,



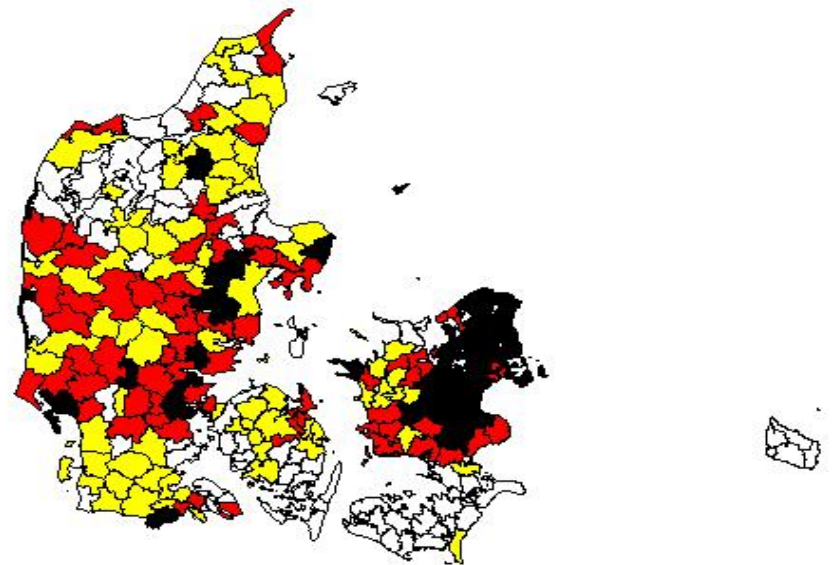
Suicides    ◻ lowest fourth    ◻ second  
                  ◻ third                    ◻ highest fourth



Percentage living alone    ◻ lowest fourth    ◻ second  
    ◻ third                    ◻ highest fourth



Percentage employed    ◻ lowest fourth    ◻ second  
    ◻ third                    ◻ highest fourth



Median gross income    ◻ lowest fourth    ◻ second  
    ◻ third                    ◻ highest fourth



**Suicide rate ratios in relation to an individual's marital status before and after controlling for area-levels of each of these factors (i.e. in adjusted models associations with income control for municipality levels of income)**

<b>Individual risk factor</b>	<b>Males</b>			
	<b>25-40 years</b>		<b>41-60 years</b>	
	<b>Unadjusted rate ratio (95% CI)</b>	<b>Adjusted rate ratio (95% CI)</b>	<b>Unadjusted rate ratio (95% CI)</b>	<b>Adjusted rate ratio (95% CI)</b>
<b>Marital status</b>				
Married	1	1	1	1
Cohabitant	1.73 (1.53-1.95)	1.72 (1.52-1.94)	1.74 (1.50-2.02)	1.74 (1.50-2.02)
Divorced	6.15 (5.46-6.93)	6.07 (5.39-6.85)	3.90 (3.56-4.28)	3.89 (3.54-4.27)
Single	4.36 (3.95-4.81)	4.31 (3.90-4.76)	2.92 (2.63-3.23)	2.91 (2.63-3.22)

# What should be done next?

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- Documentation of data
  - Selected variables are described in details
- Relationship between units (over time)
  - Family (OK)
  - Employees and establishments (OK)
  - Identity of establishments (OK)
  
  - Integration of information on enterprises
  - GIS